

28. (Twice Amended) A semiconductor device, comprising:

a substrate having a main surface and a back surface, the back surface having a central area, an intermediate area surrounding the central area and a peripheral area surrounding the intermediate area;

a semiconductor chip disposed on the main surface;

a first bump unit disposed in the central area of the back surface to radiate heat from the semiconductor device, the first bump unit including a plurality of bumps disposed a first distance apart from each other; and

a second bump unit formed in the peripheral area of the back surface for transmitting signals, the second bump unit including a plurality of bumps disposed a second distance apart from each other sufficient to assure that upon application of a heat treatment to the device causing the bumps of the first and second bump units to melt, the bumps of the second bump unit remain apart from each other, the second distance being greater than the first distance;

wherein the bumps of the first bump unit are sufficiently close to each other that upon the application of the heat treatment to the device, the bumps of the first bump unit fuse into a unitary body.

Please add new claims 30-31 reading as follows

30. (New) The semiconductor device according to claim 28, wherein the second distance is less than a width of the intermediate area.

31. (New) The semiconductor device according to claim 25, wherein the first distance is about 1 to 1.4 times the diameter of the bumps of the first bump unit, and the second distance is about 1.6 to 1.7 times the diameter of the bumps of the second bump unit.